AMENDMENTS TO THE CLAIMS

1. (Original) A communication system, comprising:

an asynchronous transfer mode (ATM) layer device that supports a plurality of ATM communication channels, each of the plurality of ATM communications channels corresponding to a first class of service or a second class of service;

a plurality of physical layer devices, each of the plurality of physical layer devices having a first channel port associated with the first class of service and a second channel port associated with the second class of service; and

a local interface in communication with the ATM layer device and the plurality of physical layer devices and having a plurality of addresses,

for establishing a plurality of channel connections between each of the plurality of ATM communication channels and the first channel port and the second channel port in each of the plurality of physical layer devices, the local interface having a plurality of addresses;

wherein each of the plurality of channel connections associated with the plurality of second channel ports is via one of the plurality of addresses and at least two of the plurality of channel connections associated with the plurality of first channel ports is via no more than one of the plurality of addresses.

2. (Original) The system of claim 1, wherein each of the plurality of ATM communication channels associated with one of the plurality of first channel ports is adapted to carry priority data traffic and each of the plurality of ATM communication channels associated with one of the plurality of second channel ports is adapted to carry non-priority data traffic.

3. (Original) The system of claim 2, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

4. (Original) The system of claim 2, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combinations thereof.

5. (Original) The system of claim 1, wherein the local interface conforms to Universal Test and Operations Physical Interface (UTOPIA) level 2 specification.

6. (Original) The system of claim 1, wherein each of the plurality of physical layer devices is adapted to communicate via a first communication channel and a second communication channel with an external physical layer device.

7. (Original) The system of claim 6, further comprising an ATM switch that provides the plurality of communication channels to the ATM layer device.

8. (Original) The system of claim 7, wherein the ATM switch is implemented in a digital subscriber line access multiplexer (DSLAM).

9. (Cancelled)

10-17. (Cancelled)

18. (Cancelled)

19. (Previously Presented) A communication system, comprising:

an ATM layer means for receiving a plurality of ATM communication channels, each of the plurality of ATM communication channels corresponding to a first class of service or a second class of service;

a plurality of physical layer means, each for communicating with an external physical layer device via a first port associated with the first class of service and a second port associated with the second class of service; and

a communication means for interfacing the ATM layer means and the plurality of physical layer means and for establishing a plurality of channel connections between each of the plurality of ATM communication channels and the first and second ports associated with each of the plurality of physical layer means, the communication means having a plurality of addresses;

wherein each of the plurality of channel connections associated with each of the plurality of second ports is via one of the plurality of addresses and at least two of the plurality of channel connections associated with the plurality of first ports is via no more than one of the plurality of addresses.

20. (Original) The system of claim 19, wherein each of the plurality of physical layer means is adapted to carry priority data traffic via the first communication channel and non-priority traffic via the second communication channel.

21. (Original) The system of claim 20, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

22. (Original) The system of claim 20, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time

variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combinations thereof.

23. (Original) The system of claim 19, further comprising an ATM switch that provides the plurality of communication channels to the ATM layer device.

24. (Original) The system of claim 23, wherein the ATM switch is implemented in a digital subscriber line access multiplexer (DSLAM).

25. (Original) The system of claim 24, wherein each of the plurality of physical layer devices provides digital subscriber loop services to the corresponding external physical layer devices.

26-32. (Cancelled)

33. (Original) A method for providing communication between an ATM layer device and a plurality of physical layer devices via a local interface having a plurality of addresses, each of the plurality of physical layer devices having a first channel port and a second channel port, comprising:

receiving an ATM cell associated with one of a plurality of ATM communication channels, each of the plurality of ATM communication channels corresponding to either a first class of service or a second class of service;

determining a VPI/VCI value associated with the ATM cell;

based on the VPI/VCI value and a predefined set of rules, determine whether the ATM cell corresponds to the first class of service or the second class of service and determine which of the plurality of addresses on the local interface to which the VPI/VCI value is associated; and

where the ATM cell corresponds to the first class of service, providing the ATM cell to all of the first channel ports via a first unique address on the local interface and where the ATM cell corresponds to the second class of service, providing the ATM cell to one of the second channel ports via a second unique address.

34. (Original) The method of claim 33, wherein the first class of service corresponds to priority data traffic and the second class of service corresponds to non-priority traffic.

35. (Original) The method of claim 34, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

36. (Original) The method of claim 35, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combination thereof.

37. (Original) The method of claim 33, wherein the plurality of ATM communication channels is received from an ATM switch.

38. (Original) The method of claim 37; wherein the ATM switch is implemented in a DSLAM.

39. (Original) The method of claim 38, further comprising providing DSL services to an external physical layer device via one of the plurality of physical layer devices.

40. (Original) A method for providing communication between an ATM layer device and a plurality of physical layer devices, each of the plurality of physical layer devices having a first channel port and a second channel port, comprising:

receiving an ATM cell associated with one of a plurality of ATM communication channels, each of the plurality of ATM communication channels corresponding to either a first class of service or a second class of service;

determining a VPI/VCI value associated with the ATM cell;

based on the VPI/VCI value and a first predefined set of rules, determine whether the ATM cell corresponds to the first class of service or the second class of service and determine which of a plurality of addresses on a first local interface to which the VPI/VCI value is associated; and

where the ATM cell corresponds to the first class of service, providing the ATM cell to an address expansion device via a first unique address on the local interface and, based on the VPI/VCI value and a second predefined set of rules, providing the ATM cell to one of the plurality of first channel ports associated with the VPI/VCI value via one of a plurality of addresses on a second local interface connected to the address expansion device and where the ATM cell corresponds to the second class of service, providing the ATM cell to one of the second channel ports via a second unique address on the first local interface.

41. (Original) The method of claim 40, wherein the first class of service corresponds to priority data traffic and the second class of service corresponds to non-priority traffic.

42. (Original) The method of claim 41, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

43. (Original) The method of claim 42, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combinations thereof.

44. (Original) The method of claim 40, wherein the plurality of ATM communication channels is received from an ATM switch.

45. (Original) The method of claim 44, wherein the ATM switch is implemented in a DSLAM.

46. (Original) The method of claim 45, further comprising providing DSL services to an external physical layer device via one of the plurality of physical layer devices.

47-60. (Cancelled)

61. (Original) A computer-readable medium for providing communication between an ATM layer device and a plurality of physical layer devices, each of the plurality of physical layer devices having a first channel port and a second channel port, comprising:

a first portion of logic for receiving an ATM cell associated with one of a plurality of ATM communication channels, each of the plurality of ATM communication channels corresponding to either a first class of service or a second class of service;

a second portion of logic for determining a VPI/VCI value associated with the ATM cell;

a third portion of logic for determining, based on the VPI/VCI value and a first predefined set of rules, whether the ATM cell corresponds to the first class of service or the

second class of service and determine which of a plurality of addresses on a first local interface to which the VPI/VCI value is associated; and

a fourth portion of logic for (i) providing the ATM cell to an address expansion device via a first unique address on the local interface and for providing, based on the VPI/VCI value and a second predefined set of rules, the ATM cell to one of the plurality of first channel ports associated with the VPI/VCI value via one of a plurality of addresses on a second local interface where the ATM cell corresponds to the first class of service and (ii) providing the ATM cell to one of the second channel ports via a second unique address on the first local interface where the ATM cell corresponds to the second class of service.

62. (Original) The computer-read able medium of claim 61, wherein the first class of service corresponds to priority data traffic and the second class of service corresponds to non-priority traffic.

63. (Original) The computer-readable medium of claim 62, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

64. (Original) The computer-readable medium of claim 63, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combination thereof.

65. (Original) The computer-readable medium of claim 61, wherein the plurality of ATM communication channels is received from an ATM switch.

66. (Original) The computer-readable medium of claim 65, wherein the ATM switch is implemented in a DSLAM.

67. (Original) The computer-readable medium of claim 66, further comprising a fifth portion of logic for providing DSL services to an external physical layer device via one of the plurality of physical layer devices.

68. (Previously Presented) A communication system, comprising:

an asynchronous transfer mode (ATM) layer device that supports a plurality of ATM communication channels, each of the plurality of ATM communications channels corresponding to a first class of service or a second class of service;

a plurality of physical layer devices, each of the plurality of physical layer devices having a first channel port associated with the first class of service and a second channel port associated with the second class of service; and

a local interface in communication with the ATM layer device and the plurality of physical layer devices, the local interface establishing a plurality of first class connections, each first class connection being between one of the ATM communications channels and one of the first channel ports, all of the first class connections using a single address on the local interface, the local interface establishing a plurality of second class connections, each second class connection being between one of the ATM communications channels and one of the second channel ports, each of the second class connections having a unique address on the local interface.

69. (Previously Presented) The system of claim 68, wherein each first channel connection is adapted to carry priority data traffic and each second channel connection is adapted to carry non-priority data traffic.

70. (Previously Presented) The system of claim 69, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

71. (Previously Presented) The system of claim 69, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combinations thereof.

72. (Previously Presented) The system of claim 68, wherein the local interface conforms to Universal Test and Operations Physical Interface (UTOPIA) level 2 specification.

73. (Previously Presented) The system of claim 68, wherein each of the plurality of physical layer devices is adapted to communicate via a first physical layer channel and a second physical layer channel with an external physical layer device.

74. (Previously Presented) The system of claim 73, further comprising an ATM switch that provides the plurality of first channel connections and the plurality of second channel connections to the ATM layer device.

75. (Previously Presented) The system of claim 74, wherein the ATM switch is implemented in a digital subscriber line access multiplexer (DSLAM).

76. (Previously Presented) A communication system, comprising:

a local interface;

an address expansion device having an address on the local interface;

a plurality of physical layer (PHY) devices, each of the plurality of physical layer devices having a first channel port associated with a first class of service and a second channel port associated with a second class of service, each of the second channel ports having an address on the local interface;

an asynchronous transfer mode (ATM) layer device that supports a first plurality of ATM communication channels corresponding to the first class of service and a second plurality of ATM communication channels corresponding to the second class of service, the ATM layer device being in communication with each of the second channel ports through each second channel port's respective address on the local interface, the ATM layer device being in communication with the address expansion device through the address expansion device's address on the local interface; and

an expansion interface, each of the first channel ports having an address on the expansion interface, the expansion device being in communication with each of the first channel ports through each first channel port's respective address on the expansion interface,

the local interface and expansion interface configured to establish a first plurality of channel connections, each of the first plurality of channel connections being established between one of the first plurality of ATM communication channels and one of the first channel ports, and

the local interface and expansion interface further configured to establish a second plurality of channel connections, each of the second plurality of channel connections being

established between one of the second plurality of ATM communication channels and one of the second channel ports.

77. (Previously Presented) The system of claim 76, wherein each of the first plurality of ATM communication channels is adapted to carry priority data traffic and each of the second plurality of ATM communication channels is adapted to carry non-priority data traffic.

78. (Previously Presented) The system of claim 77, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

79. (Previously Presented) The system of claim 78, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combinations thereof.

80. (Previously Presented) The system of claim 76, wherein the local interface and the expansion interface conform to Universal Test and Operations Physical Interface (UTOPIA) level 2 specification.

81. (Previously Presented) The system of claim 76, wherein each of the plurality of physical layer devices is adapted to communicate via the first and second communication channels with an external physical layer device.

82. (Previously Presented) The system of claim 76, further comprising an ATM switch that provides the plurality of communication channels to the ATM layer device.

83. (Previously Presented) The system of claim 82, wherein the ATM switch is implemented in a digital subscriber line access multiplexer (DSLAM).

84. (Previously Presented) A communication system, comprising:

an ATM layer means for receiving a plurality of ATM communication channels, each of the plurality of ATM communication channels corresponding to a first class of service or a second class of service;

a plurality of physical layer means, each for communicating with an external physical layer device via a first communication channel associated with the first class of service and a second communication channel associated with the second class of service; and

a communication means for interfacing the ATM layer means and the plurality of physical layer means, the communication means establishing a plurality of first class connections, each first class connection being between one of the ATM communications channels and one of the first channel ports, all of the first class connections using a single address on the local interface, the communication means establishing a plurality of second class connections, each second class connection being between one of the ATM communications channels and one of the second channel ports, each of the second class connections having a unique address on the local interface.

85. (Previously Presented) The system of claim 84, wherein each of the plurality of physical layer means is adapted to carry priority data traffic via the first communication channel and non-priority traffic via the second communication channel.

86. (Previously Presented) The system of claim 85, wherein the priority data traffic is real-time traffic and the non-priority data traffic is non-real-time traffic.

87. (Previously Presented) The system of claim 85, wherein the priority data traffic corresponds to any of the following group of ATM service categories: constant bit rate (CBR), real-time variable bit rate (rt-VBR), non-real-time variable bit rate (nrt-VBR), available bit rate (ABR), unspecified bit rate (UBR), and combinations thereof.

88. (Previously Presented) The system of claim 84, further comprising an ATM switch that provides the plurality of communication channels to the ATM layer device.

89. (Previously Presented) The system of claim 88, wherein the ATM switch is implemented in a digital subscriber line access multiplexer (DSLAM).

90. (Previously Presented) The system of claim 84, wherein each of the plurality of physical layer devices provides digital subscriber loop services to a corresponding external physical layer device.